

1. (Currently amended.) A method of reclaiming a well completion brine

comprising the steps of:

- a. mixing the brine containing metal impurities with an organic chelant for a time sufficient for the chelant to complex a metal and form a complex complexed metal precipitate; and
- b. removing the complex complexed metal precipitate from the brine

wherein the metal impurities contain iron and further wherein the complexed metal precipitate contains iron.

2. (Original.) The method of Claim 1, wherein the organic chelant contains up to about 120 carbon atoms and further contains at least one functional group selected from the group consisting of -CO₂H or -PO(OH)R²⁰ or a salt or ester thereof, -C(O)-, -OE, -SE, -N=C(R²)R³, EO-N=C(R²)R³, -N(R²)R³, and a - N(C(O)R¹)R² group, optionally substituted with a -COOH or -PO(OH)R²⁰ or a salt or ester thereof or -SE or -OE group, wherein R² and R³ are independently selected from E or forms, with nitrogen, phosphorous, oxygen or sulfur, a heterocyclic ring; E is R¹ or -H; R¹ is a C₁-C₃₀ alkyl or aralkyl group or a derivative thereof; and R²⁰ is either -OH or R¹.

3. (Original.) The method of Claim 2, wherein the organic chelant is further substituted with at least one group selected from -CO₂H or -PO(OH)R²⁰ or a salt or ester thereof, -C(O)-, -OE, -SE, -N=C(R²)R³, EO-N=C(R²)R³, -P(R²)R³, -POR²R³, -PO₃, -OPO₃, -SO₃, -OSO₃, -NO₂, -N(R²)R³ or -N(C(O)R¹)R².

4. (Original.) The method of Claim 2, further comprising mixing the brine with an oxidizer.

5. (Original.) The method of Claim 4, wherein the oxidizer is a slow reacting oxidizer.

6. (Original.) The method of Claim 5, wherein the oxidizer is calcium peroxide or magnesium peroxide.

7. (Original.) The method of Claim 6, wherein the organic chelant is benzoic acid or a salt or ester thereof.

8. (Original.) The method of Claim 2, wherein the functional group is -COOH or a salt or ester thereof.

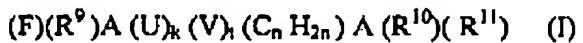
9. (Original.) The method of Claim 8, wherein the organic chelant is benzoic acid or a salt or ester thereof.

10. (Previously presented.) The method of Claim 8, wherein the organic chelant is further substituted with at least one group selected from -OE, -SE, -P(R²)R³, -POR²R³, -PO₃, -OPO₃, -SO₃, -OSO₃, -NO₂, -N=C(R²)R³, EO-N=C(R²)R³, -N(R²)R³, -N(CH₂)₂ and -N(C(O)R¹)R² optionally substituted with a -COOH or -PO(OH)R²⁰ group or a salt or ester thereof or with an -OE or -SE group.

11. (Original.) The method of Claim 10, wherein the organic chelant further contains the functional group -NR²R³ optionally substituted with a -COOH or -PO(OH)R²⁰ group or a salt or ester thereof or with an -OE or -SE group.

12. (Original.) The method of Claim 11, wherein the organic chelant is nitrilotriacetic acid or a salt or ester thereof.

13. (Previously presented.) The method of Claim 10, wherein the organic chelant is an ethylene diamine type of the structural formula:



or a derivative thereof

wherein A is nitrogen or phosphorus; R⁸, R⁹, R¹⁰ and R¹¹ are independently -(CH₂)_xCOOH or -(CH₂)_xPO(OH)R²⁰ or a salt or ester thereof, -(CH₂)_xOE or

(CH₂)_xSE or a derivative thereof; R⁵ is -H or a C₁-C₃₀ alkyl or aralkyl group or derivative thereof; R¹⁴ is R⁵ or R⁸; F is -(CH₂)_xCOOH or -(CH₂)_xPO(OH)R²⁰ or a salt or ester thereof, -OE, -SE, -(CH₂)_xSE or -(CH₂)_xOE or a derivative thereof; U is -(CH₂CONR¹⁴-)_x; V is -(C_nH_{2n}AR⁸-); n is 1 to 15; x is 1 to 4; and k, z and t are independently 0 to 2.

14. (Previously presented.) The method of Claim 13, wherein the organic chelant is selected from the group consisting of ethylene diamine tetra acetic acid; hydroxyethylenediamine triacetic; O, O'-bis(2-aminoethyl) ethyleneglycol-N,N,N',N'-tetraacetic acid; and N-(glycylglycyl)-1,2-diaminoethane-N',N',N'',N''-tetraacetic acid.

15. (Original.) The method of Claim 8, wherein the organic chelant further contains the functional group -N(COR¹)R² group optionally substituted with a -COOH or -PO(OH)R²⁰ group or a salt or ester thereof or with an -OE or SE group.

16. (Cancelled.)

17. (Cancelled.)

18. (Original.) The method of Claim 15, wherein the organic chelant contains from ten to one hundred twenty carbon atoms.

19. (Original.) The method of Claim 18, wherein the organic chelant contains a counter ion selected from the group consisting of ionic forms of sodium, potassium, cesium, ammonium, monoethanolamine, diethanolamine, triethanolamine, N-propylamine, isopropylamine, 2-amino-2-methyl-1,3-propanediol, 2-amino-2-methyl-1-propanol, 2-amino-2-ethyl-1,3-propane diol, tris(hydroxymethyl) aminomethane, group II metals, and a Group 3-7 transition metal.

20. (Original.) The method of Claim 8, wherein the organic chelant is substituted with at least one -OE, -SE, -POR²R³, -PO₃, -OPO₃, -SO₃, or -OSO₃ group.

21. (Original.) The method of Claim 20, wherein the organic chelant is substituted with

an -OE group.

22. (Previously presented.) The method of Claim 21, wherein the organic chelant is zinc di-(12-hydroxy-9-octadecenoate).

23. (Original.) The method of Claim 8, wherein the organic chelant is substituted with a -P(R²)R³ or -POR²R³ group.

24. (Cancelled.)

25. (Original.) The method of Claim 23, wherein the organic chelant is of the formula (HOOCCH₂)₂PCH₂CH₂P(CH₂COOH)₂ or a salt or ester thereof.

26. (Original.) The method of Claim 8, wherein the organic chelant is selected from the group consisting of benzoic acid; benzene-1,2-dicarboxylic acid; benzene-1,3,5-tricarboxylic acid; nonyl-1,3-dicarboxylic acid; and 1-hydroxy-2-naphthoic acid and salts thereof.

27. (Original.) The method of Claim 2, wherein the organic chelant contains at least one -N(R²)R³, -N=C(R²)R³, EO-N=C(R²)R³ or a -N(C(O)R¹)R² group wherein R² and R³ independently may be substituted with a -COOH, -PO(OH)R²⁰, -SE or -OE group or a salt or ester thereof.

28. (Original.) The method of Claim 27, wherein the organic chelant is N,N'-dimethyl-N,N'-dilauroylethylenediamine or a salt thereof.

29. (Original.) The method of Claim 27, wherein the organic chelant is 1, 2-diaminobenzene or a salt thereof.

30. (Original.) The method of Claim 27, wherein the organic chelant is iminobis(methyleneephosphonic acid) or a salt or ester thereof.

31. (Original.) The method of Claim 27, wherein the organic chelant is further substituted with at least one group selected from -OE, -SE, -PO₃, -OPO₃, -SO₃, -OSO₃, or -NO₂.

32. (Original.) The method of Claim 31, wherein the organic chelant is substituted with an -OE group.
33. (Original.) The method of Claim 32, wherein the organic chelant is 8-hydroxy quinoline or a salt thereof.
34. (Original.) The method of Claim 32, wherein the organic chelant is substituted with a -SO₃ or a -OSO₃ group.
35. (Original.) The method of Claim 27, wherein the organic chelant is substituted with a -SO₃ or a -OSO₃ group.
36. (Original.) The method of Claim 35, wherein the organic chelant is 1-aminobenzene-2-sulfonic acid or a salt thereof.
37. (Original.) The method of Claim 27, wherein the organic chelant is a nitrogen, phosphorous, oxygen or sulfur containing heterocyclic ring.
38. (Original.) The method of Claim 37, wherein the organic chelant is porphine or derivatives thereof or salts thereof.
39. (Previously presented.) The method of Claim 27, wherein the organic chelant is selected from the group consisting of ethylenediaminetetraacetic acid, 1,2-dimethylethylenedinitrilotetraacetic acid; DL-1-alkylethylenedinitrilotetraacetic acid N,N'-diamide; 1,2-dimethyloethylenedinitrilotetraacetic acid N,N'-diamide; 1,2-phenylenedinitrilotetraacetic acid; N,N-dimethyl-2-aminophenol; and 4-phenyl-8-mercaptoquinoline and salts thereof.
40. (Cancelled.)
41. (Original.) The method of Claim 2, wherein the functional group is -OE or -SE.
42. (Original.) The method of Claim 41, wherein the organic chelant is N-hydroxy-N-

nitrosobenzenamine or a salt thereof.

43. (Original.) The method of Claim 41, wherein the organic chelant further contains at least one group selected from -PO₃, -OPO₃, -SO₃, -OSO₃, or -NO₂.

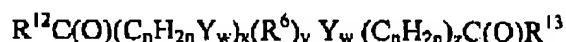
44. (Original.) The method of Claim 43, wherein the organic chelant contains a -SO₃ or -OSO₃ group.

45. (Original.) The method of Claim 44, wherein the organic chelant is 1-hydroxybenzene-2-sulfonic acid or a salt thereof.

46. (Original.) The method of Claim 41, wherein the organic chelant contains a -PO₃ or -OPO₃ group.

47. (Original.) The method of Claim 43, wherein the organic chelant is 4-nitro-1,2-dihydroxy benzene or a salt thereof.

48. (Original.) The method of Claim 2, wherein the organic chelant is a diketone having the structural formula:

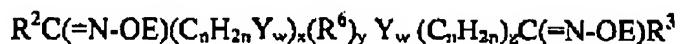


or derivative thereof

wherein R¹² and R¹³ are independently -H or a C₁-C₃₀ alkyl or aralkyl group optionally substituted with a -COOH or -PO(OH)R²⁰ or a salt or ester thereof, -N(R²)R³, -SE or -OE group; R⁶ is C_nH_{2n} or a derivative thereof; Y is -O, -S, -P or -N; n is 1 to 30, w is 0 or 1, and x, y and z are independently 0 to 5.

49. (Original.) The method of Claim 48, wherein the organic chelant is pentane-2,4-dione or octadecane-2,4-dione.

50. (Original.) The method of Claim 3, wherein the organic chelant is a dioxime having the structural formula:



or a derivative thereof;

wherein R² and R³ are independently selected from R¹, -(CH₂)_sOE, -(CH₂)_sSE or -(CH₂)_sCOOH or -(CH₂)_sPO(OH)R²⁰ or a salt or ester thereof; R¹ is -H or a C₁-C₃₀ alkyl or aralkyl group or derivative thereof; R⁶ is C_nH_{2n} or a derivative thereof; E is R¹ or -H; Y is -O-, -S, -P or -N; s is 1 to 4, n is 0 to 5, w is 0 or 1 and x, y and z are independently 0 to 5.

51. (Original.) The method of Claim 50, wherein the organic chelant is 2,3-butanedionedioxime.

52. (Original.) The method of Claim 1, further comprising mixing the brine with an oxidizer.

53. (Original.) The method of Claim 52, wherein the oxidizer is a slow reacting oxidizer.

54. (Previously presented.) The method of Claim 1, further comprising adding to the brine an absorbent or defoamer.

55. (Original.) The method of Claim 54, wherein the absorbent is activated carbon.

56. (Cancelled.)

57. (Previously presented.) The method of Claim 52, further comprising adding to the brine an absorbent or defoamer.